

# STC-TAMUK Course Map

## *Pre-Engineering Course of Study (STC) and Bachelor of Science Degrees in Engineering (TAMUK)*

*Architectural Engineering  
Chemical Engineering  
Civil Engineering  
Electrical Engineering  
Environmental Engineering  
Mechanical Engineering  
Natural Gas Engineering*

### **A. Core Curriculum - 42 credit hours**

*The indicated STC courses are part of the STC Core Curriculum. They also substitute for the corresponding courses in the TAMUK Core Curriculum. STC students should note that they give themselves more flexibility in course options by completing the Core Curriculum at STC. More importantly, completing the entire STC Core Curriculum automatically satisfies the TAMUK Core Curriculum without the need for a course-by-course evaluation.*

*This course map is based on the TAMUK Core Curriculum adopted for students beginning their studies in the 2014-15 academic year. Current students basing their STC studies on earlier versions of the TAMUK Core Curriculum should consult academic advisors at STC and TAMUK, although in nearly all cases the course mapped below will satisfy the TAMUK Core Curriculum in place for several years prior.*

STC Equivalents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
<b>Communication – 6 credit hours</b>					
ENGL 1301	Composition I	3	ENGL 1301	Rhetoric & Composition I	3
ENGL 1302	Composition II - Rhetoric	3	ENGL 1302	Rhetoric & Composition II	3
<b>Mathematics – 3 credit hours</b>					
The [extra credit hour] for MATH 2413 can be counted against the Component Area Option (Other) at the end of this section. Other mathematics courses required for an engineering degree are listed in sections B and C.					
MATH 2413	Calculus I	3 [+1]	MATH 2413	Calculus I	3 [+1]
<b>Life and Physical Sciences – 6 credit hours</b>					
The extra STC credit hours in brackets] for CHEM 1411 and PHYS 2425 can be counted against the Component Area Option (Other) at the end of this section. Other science courses required for an engineering degree are listed in sections B and C.					
CHEM 1411	General Chemistry I	3 [+1]	CHEM 1311	General Inorganic Chemistry I	3

PHYS 2425	University Physics I	3 [+1]	PHYS 2325	University Physics I	3
<b>Language, Philosophy &amp; Culture – 3 credit hours (select one)</b>					
<i>Various literature courses</i>	ENGL 2321, 2323,2331, 2341	3	<i>Various literature courses</i>	ENGL 2342 or 2362	3
PHIL 1301	Introduction to Philosophy	3	PHIL 1301	Introduction to Philosophy	3
SPAN 2311	Intermediate Spanish I	3	SPAN 2311	Intermediate Spanish I	3
SPAN 2312	Intermediate Spanish I	3	SPAN 2312	Intermediate Spanish I	3
<b>Creative Arts – 3 credit hours (select one)</b>					
ARTS 1303	Art Survey I	3	ARTS 1303	Art History I	3
ARTS 1311	Design I	3	ARTS 1311	Design I	3
ARTS 1316	Drawing I	3	ARTS 1316	Drawing I	3
ARTS 2316	Painting I	3	ARTS 2316	Painting I	3
ARTS 2326	Sculpture I	3	ARTS 2326	Sculpture	3
ARTS 2333	Printmaking I	3	ARTS 2333	Printmaking	3
ARTS 2346	Ceramics I	3	ARTS 2346	Ceramics	3
<b>American History – 6 credit hours</b>					
HIST 1301	United States History I	3	HIST 1301	American History to 1877	3
HIST 1302	United States History II	3	HIST 1302	American History Since 1877	3
<b>Government/Political Science – 6 credit hours</b>					
GOVT 2305	Federal Government	3	POLS 2301	Government & Politics of U.S	3
GOVT 2306	Texas Government	3	POLS 2302	Government & Politics of Texas	3
<b>Social and Behavioral Sciences – 3 credit hours (select one)</b>					
ANTH 2302	Introduction to Archeology	3	ANTH 2301	Introduction to Archeology	3
ECON 2301	Principles of Economics I - Macro	3	ECON 2301	Principles of Macroeconomics	3

PSYC 2301	General Psychology	3	PSYC 2301	Introduction to Psychology	3
SOCI 1301	Introductory Sociology	3	SOCI 1301	Principles of Sociology	3
SOCI 1306	Contemporary Social Problems	3	SOCI 1306	Social Problems	3
<b>Component Area Option (Communication) – 3 credit hours</b>					
SPCH 1321	Business and Professional Speaking	3	COMS 1315	Business and Professional Communication	3
<b>Component Area Option (Other) – 3 credit hours</b> The extra credit hour from the Mathematics Area and the lab credits hours from the Life and Physical Sciences Area are included here.					
CHEM 1411	General Chemistry I Lab	1	CHEM 1111	General Inorganic Chemistry I Lab	1
MATH 2413	Calculus I	1 [+3]	MATH 2413	Calculus I	1 [+3]
PHYS 2425	University Physics I Lab	1	PHYS 2125	University Physics I Lab	1
<b>TOTAL CREDIT HOURS</b>		<b>42</b>	<b>TOTAL CREDIT HOURS</b>		<b>42</b>

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**B. Other STC courses that contribute to most (see notes in parentheses) engineering degrees at TAMUK**

The STC courses listed below fulfill the corresponding TAMUK courses. There is one instance a STC course with more credit hours is used to satisfy a TAMUK course, thus causing the STC student to take one more credit than their peers at TAMUK. The student must decide (ideally with the advice of his/her STC academic advisor and the TAMUK College of Engineering Academic Advisor) if this is in his/her best interest. STC students always have the option of completing these courses at TAMUK rather than STC to avoid accumulating the extra credit hours.

STC Equivalents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
PHYS 2426	University Physics II	4	PHYS 2326	Univ. Physics II and Univ. Phys. II Lab <i>(Lab is not required for Mechanical Engineering.)</i>	4 (3+1)
MATH 2414	Calculus II	4	MATH 2414	Calculus II	4
MATH 2415	Calculus III	4	MATH 3415	Calculus III <i>(Math elective in Architectural Engineering and Civil Engineering; not required for Environmental Engineering and Natural Gas Engineering.)</i>	4
MATH 2420	Differential Equations	4	MATH 3320	Differential Equations	3

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## C. STC courses meeting requirements for specific engineering degrees at TAMUK

The STC courses listed below fulfill the corresponding TAMUK courses. There are a few instances – because of course content or a co-requisite requirement – in which a combination of STC courses (or a single STC course) with more credit hours is used to satisfy a TAMUK course, thus causing the STC student to take more credits than their peers at TAMUK. The student must decide (ideally with the advice of his/her STC academic advisor and the TAMUK College of Engineering Academic Advisor) if this is in his/her best interest. STC students always have the option of completing these courses at TAMUK rather than STC to avoid accumulating the extra credit hours.

STC Equivalents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
<b>Architectural Engineering</b>					
BIOL 1406 or GEOL 1403	Biology for Science Majors I or Physical Geology	4	BIOL 1306 or GEOL 1303	General Biology I or Physical Geology <i>(science elective; select one)</i>	3
ENGR 1304	Engineering Graphics	3	AEEN 1310	Computer-Based Graphics and Design I	3
ENGR 2301	Statics	3	CEEN 2301	Mechanics I	3
<b>Chemical Engineering</b>					
BIOL 1406	Biology for Science Majors I	4	BIOL 1306	General Biology I	3
CHEM 1412	General Chemistry II	4	CHEM 1312 and CHEM 1112	General Inorganic Chemistry II and General Inorganic Chem. II Lab	4 (3+1)
CHEM 2423	Organic Chemistry I	4	CHEM 3323 and CHEM 3123	Organic Chemistry I and Organic Chemistry I Lab	4 (3+1)

CHEM 2425	Organic Chemistry II	4	CHEM 3325 and CHEM 3125	Organic Chemistry II and Organic Chemistry II Lab	4 (3+1)
COSC 1436	Programming Fundamentals I (STC Core Curriculum course)	4	CSEN 2303	Introduction to Computing Using Visual Basic and Excel	3
<b>Civil Engineering</b>					
BIOL 1406 or GEOL 1403	Biology for Science Majors I (4) or Physical Geology (4)	4	BIOL 1306 or GEOL 1303	General Biology I or Physical Geology <i>(science elective; select one)</i>	3
ENGR 1304	Engineering Graphics	3	AEEN 1310	Computer-Based Graphics and Design I	3
ENGR 2301	Statics	3	CEEN 2301	Mechanics I	3
<b>Electrical Engineering</b>					
COSC 1436	Programming Fundamentals I (STC Core Curriculum course)	4	CSEN 2304	Introduction to Computer Science	3
ENGR 2301 and ENGR 2302	Statics (3) and Dynamics (3)	6 (3+3)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3
ENGR 2405	Electrical Circuits I	4	EEN 2323	Network Analysis I	3
ENGR 2406	Digital Systems Engineering I	4	EEEN 2340	Digital Logic Design	3
<b>Environmental Engineering</b>					
BIOL 1406	Biology for Science Majors I	4	BIOL 1306	General Biology I	3
CHEM 1412	General Chemistry II	4	CHEM 1312 and CHEM 1112	General Inorganic Chemistry II and General Inorganic Chem. II Lab	4 (3+1)
CHEM 2423	Organic Chemistry I	4	CHEM 3323 and CHEM 3123	Organic Chemistry I and Organic Chemistry I Lab	4 (3+1)
COSC 1436	Programming Fundamentals I (STC Core Curriculum course)	4	EVEN 2304	Computer Methods for Environmental Engineers	3
ENGR 2301 and ENGR 2302	Statics (3) and Dynamics (3)	6 (3+3)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3
<b>Mechanical Engineering</b>					
ENGR 1304	Engineering Graphics	3	MEEN 1310	Computer Based Graphics and Design I	3
ENGR 2301	Statics	3	CEEN 2301	Mechanics 1	3
ENGR 2302	Dynamics	3	MEEN 2302	Mechanics II	3
<b>Natural Gas Engineering</b>					
CHEM 1412	General Chemistry II	4	CHEM 1312 and CHEM 1112	General Inorganic Chemistry II and General Inorganic Chem. II Lab	4 (3+1)

CHEM 2423	Organic Chemistry I	4	CHEM 3323 and CHEM 3123	Organic Chemistry I and Organic Chemistry I Lab	4 (3+1)
GEOL 1403	Physical Geology	4	GEOL 1303 and GEOL 1103	Physical Geology and Physical Geology I Lab	4 (3+1)
ENGR 2301 and ENGR 2302	Statics (3) and Dynamics (3)	6 (3+3)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3